IN THE CLAIMS:

Please enter the listing of claims as follows:

1.-17. (Cancelled)

18. (Original) A re-configurable channel dropping de-multiplexer, comprising:
an input;
a first polarizing port optically coupled to the input;
a first polarization modulator optically coupled to the first polarizing port;
a polarization beam splitter (PBS) having a first side that is optically coupled to the first polarization modulator at a side opposite to the first polarizing port;
a second polarization modulator optically coupled to the PBS at a second side of the PBS that is opposite to the first side;
a second polarizing port optically coupled to the second polarization modulator at a side opposite to the PBS;
a multiple-channel output optically coupled to the second polarizing port; and
an isolator core optically coupled to the PBS at a third side of the PBS that is not parallel to either of the first two sides.

19. (Original) A cascaded re-configurable system having two or more re-configurable channel dropping de-multiplexers, comprising:
a first re-configurable channel dropping de-multiplexer, comprising:
an input for receiving a plurality of channels;
a first polarizing port optically coupled to the input;
a first polarization modulator optically coupled to the first polarizing port;
a polarization beam splitter (PBS) having a first side that is optically coupled to the first polarization modulator at a side opposite to the first polarizing port;
a second polarization modulator optically coupled to the PBS at a second side of the PBS that is opposite to the first side;

a second polarizing port optically coupled to the second polarization modulator at a side opposite to the PBS; and

a multiple-channel output optically coupled to the second polarizing port; and

a second re-configurable channel dropping de-multiplexer, optically coupled to the first re-configurable channel dropping de-multiplexer, comprising:

an input, coupled to the multiple-channel output of the first re-configurable channel dropping de-multiplexer;

a first polarizing port optically coupled to the input;

a first polarization modulator optically coupled to the first polarizing port;

a polarization beam splitter (PBS) having a first side that is optically coupled to the first polarization modulator at a side opposite to the first polarizing port;

a second polarization modulator optically coupled to the PBS at a second side of the PBS that is opposite to the first side;

a second polarizing port optically coupled to the second polarization modulator at a side opposite to the PBS; and

a multiple-channel output optically coupled to the second polarizing port.

Please add the following new claims:

20. (New) A re-configurable channel dropping de-multiplexer, comprising:

an input;

a first polarizing port optically coupled to the input;

a first polarization modulator optically coupled to the first polarizing port;

a polarization beam splitter (PBS) having a first side that is optically coupled to the first polarization modulator at a side opposite to the first polarizing port;

a second polarization modulator optically coupled to the PBS at a second side of the PBS that is opposite to the first side;

a second polarizing port optically coupled to the second polarization modulator at a side opposite to the PBS;

a multiple-channel output optically coupled to the second polarizing port; and

a first quarter-wave (λ/4) plate optically coupled to the PBS at a third side of the PBS that is not parallel to either of the first two sides.

21. (New) The de-multiplexer of Claim 20, further comprising a second λ/4 plate optically coupled to the PBS at a fourth side of the PBS that is opposite to the third side and a mirror optically coupled to the second λ/4 plate at a side opposite to the PBS.

22. (New) The de-multiplexer of Claim 21, further comprising an optical channel band pass filter optically coupled to the first λ/4 plate at a side opposite to the PBS.

23. (New) The de-multiplexer of Claim 22, further comprising a third λ/4 plate optically coupled to the optical channel band pass filter at a side opposite to the first λ/4 plate.

24. (New) The de-multiplexer of Claim 23, further comprising:

a third polarizing port optically coupled to the third λ/4 plate at a side opposite to the optical channel band pass filter; and

a single-channel output optically coupled to the third polarizing port.

25. (New) The de-multiplexer of Claim 24 functioning in a first operational state, wherein the first and the second polarization modulators are configured so as to rotate the orientation of plane polarized light by 90 degrees; and wherein the input receives and directs a plurality of optical channels to both the second polarizing port and the third polarizing port such that a single dropped channel is routed to the third polarizing port and such that one or more remaining express channels are routed to the second polarizing port.

26. (New) The de-multiplexer of Claim 24 functioning in a second operational state, wherein the first and the second polarization modulators are configured so as to not change the polarization plane orientation of plane polarized light; and wherein the input receives and directs a plurality of optical channels to the second polarizing port and no optical channels are directed to the third polarizing port.

27. (New) The de-multiplexer of Claim 20, further comprising an isolator core optically coupled to the PBS at a side of the PBS that is not parallel to either of the first two sides.

28. (New) The de-multiplexer of Claim 22, wherein the optical channel band pass filter comprises a thin film band pass filter.

29. (New) The de-multiplexer of Claim 23, operating as a channel adding multiplexer, wherein the multiple-channel output serves as a multiple-channel input for receiving a plurality of express channels, the single-channel output serves as a single-channel input, the input serves as an output, and the multiple-channel input is combined with the single-channel input to the output.

30. (New) A re-configurable channel dropping de-multiplexer, comprising:
an input;
a first polarizing port optically coupled to the input;
a first polarization modulator optically coupled to the first polarizing port;
a polarization beam splitter having a first side s1 that is optically coupled to the first polarization modulator at a side opposite to the first polarizing port;
a second polarization modulator optically coupled to the PBS at a side s3 of the PBS that is not parallel to the first side s1;
a second polarizing port optically coupled to the second polarization modulator at a side opposite to the PBS;
a multiple-channel output optically coupled to the second polarizing port; and
a first quarter-wave ($\lambda/4$) plate optically coupled to the PBS at a side s2 of the PBS that is opposite to the first side s1.

31. (New) The de-multiplexer of Claim 30, further comprising:
a second $\lambda/4$ plate optically coupled to the PBS at a side s4 of the PBS opposite to the side s3; and
a mirror optically coupled to the second $\lambda/4$plate at a side opposite to the PBS.

32. (New) The de-multiplexer of Claim 31, further comprising:

an optical channel band pass filter optically coupled to the first $\lambda/4$ plate at a side opposite to the PBS;

a third $\lambda/4$ plate optically coupled to the optical channel band pass filter at a side opposite to the first $\lambda/4$ plate;

a third polarizing port optically coupled to the third $\lambda/4$ plate at a side opposite to the optical channel band pass filter; and

a single-channel output optically coupled to the third polarizing port.

33. (New) The de-multiplexer of Claim 32 operating in a first state, further comprising a plurality of optical channels λ_1-λ_n passing through the re-configurable channel dropping de-multiplexer from the first polarizing port to both the second polarizing port and the third polarizing port such that a single dropped channel λ_d is routed to the third polarizing port and one or more remaining express channels are routed to the second polarizing port.

34. (New) The de-multiplexer of Claim 32 operating in a second state, further comprising a plurality of optical channels λ_1-λ_n passing through the re-configurable channel dropping de-multiplexer wherein all the channels are routed to the second polarizing port.

35. (New) The cascaded re-configurable system of Claim 19, wherein each re-configurable channel dropping de-multiplexer further comprises a first quarter-wave ($\vartheta/4$) plate optically coupled to the PBS at a side of the PBS that is not parallel to either of the first two sides.

36. (New) The cascaded re-configurable system of Claim 19, wherein each re-configurable channel dropping de-multiplexer further comprises an isolator core optically coupled to the PBS at a side of the PBS that is not parallel to either of the first two sides.